

CIVIL AVIATION RESEARCH AND DEVELOPMENT
AUTHORIZATION ACT OF 1999

—————
JULY 12, 1999.—Committed to the Committee of the Whole House on the State of
the Union and ordered to be printed
—————

Mr. SENSENBRENNER, from the Committee on Science,
submitted the following

REPORT

[To accompany H.R. 1551]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science, to whom was referred the bill (H.R. 1551) to authorize the Federal Aviation Administration's civil aviation research and development programs for fiscal years 2000 and 2001, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

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I. AMENDMENT

The amendment is as follows:

Strike out all after the enacting clause and insert in lieu thereof the following:

SECTION 1. SHORT TITLE.

This Act may be cited as the “Civil Aviation Research and Development Authorization Act of 1999”.

SEC. 2. AUTHORIZATION OF APPROPRIATIONS.

Section 48102(a) of title 49, United States Code, is amended—

(1) by striking “and” at the end of paragraph (4)(J);

(2) by striking the period at the end of paragraph (5) and inserting in lieu thereof a semicolon; and

(3) by adding at the end the following:

“(6) for fiscal year 2000, \$647,538,400 including—

“(A) \$17,269,000 for system development and infrastructure projects and activities;

“(B) \$48,021,500 for capacity and air traffic management technology projects and activities;

“(C) \$18,939,200 for communications, navigation, and surveillance projects and activities;

“(D) \$15,765,000 for weather projects and activities;

“(E) \$8,715,700 for airport technology projects and activities;

“(F) \$39,639,000 for aircraft safety technology projects and activities;

“(G) \$53,218,000 for system security technology projects and activities;

“(H) \$26,207,000 for human factors and aviation medicine projects and activities;

“(I) \$3,481,000 for environment and energy projects and activities;

“(J) \$2,171,000 for innovative/cooperative research projects and activities, of which \$750,000 shall be for carrying out subsection (h) of this section;

“(K) \$266,712,000 for En Route research and development projects and activities;

“(L) \$58,900,000 for Terminal research and development projects and activities;

“(M) \$3,000,000 for Flight Services research and development projects and activities;

“(N) \$69,200,000 for Landing and Navigation research and development projects and activities; and

“(O) \$16,300,000 for Equipment and Facilities research and development projects and activities; and

“(7) for fiscal year 2001, \$675,706,795.”.

SEC. 3. BUDGET DESIGNATION FOR RESEARCH AND DEVELOPMENT ACTIVITIES.

Section 48102 of title 49, United States Code, is amended by inserting after subsection (f) the following new subsection:

“(g) DESIGNATION OF ACTIVITIES.—(1) The amounts appropriated under subsection (a) are for the support of all research and development activities carried out by the Federal Aviation Administration that fall within the categories of basic research, applied research, and development, including the design and development of prototypes, in accordance with the classifications of the Office of Management and Budget Circular A–11 (Budget Formulation/Submission Process).

“(2) The Department of Transportation’s annual budget request for the Federal Aviation Administration shall identify all of the activities carried out by the Administration within the categories of basic research, applied research, and development, as classified by the Office of Management and Budget Circular A–11. Each activity in the categories of basic research, applied research, and development shall be identified regardless of the budget category in which it appears in the budget request.”.

SEC. 4. NATIONAL AVIATION RESEARCH PLAN.

Section 44501(c) of title 49, United States Code, is amended—

(1) in paragraph (2)(B)—

(A) by striking “and” at the end of clause (iii);

(B) by striking the period at the end of clause (iv) and inserting in lieu thereof “; and”; and

(C) by adding at the end the following new clause:
 “(v) highlight the research and development technology transfer activities that promote technology sharing among government, industry, and academia through the Stevenson-Wydler Technology Innovation Act of 1980.”; and
 (2) in paragraph (3), by inserting “The report shall be prepared in accordance with requirements of section 1116 of title 31, United States Code.” after “effect for the prior fiscal year.”.

SEC. 5. INTEGRATED SAFETY RESEARCH PLAN.

(a) **REQUIREMENT.**—Not later than March 1, 2000, the Administrator of the National Aeronautics and Space Administration and the Administrator of the Federal Aviation Administration shall jointly prepare and transmit to the Congress an integrated civil aviation safety research and development plan.

(b) **CONTENTS.**—The plan required by subsection (a) shall include—

(1) an identification of the respective research and development requirements, roles, and responsibilities of the National Aeronautics and Space Administration and the Federal Aviation Administration;

(2) formal mechanisms for the timely sharing of information between the National Aeronautics and Space Administration and the Federal Aviation Administration, including a requirement that the FAA–NASA Coordinating Committee established in 1980 meet at least twice a year; and

(3) procedures for increased communication and coordination between the Federal Aviation Administration research advisory committee established under section 44508 of title 49, United States Code, and the NASA Aeronautics and Space Transportation Technology Advisory Committee, including a proposal for greater cross-membership between those 2 advisory committees.

SEC. 6. INTERNET AVAILABILITY OF INFORMATION.

The Administrator of the Federal Aviation Administration shall make available through the Internet home page of the Federal Aviation Administration the abstracts relating to all research grants and awards made with funds authorized by the amendments made by this Act. Nothing in this section shall be construed to require or permit the release of any information prohibited by law or regulation from being released to the public.

SEC. 7. RESEARCH ON NONSTRUCTURAL AIRCRAFT SYSTEMS.

Section 44504(b)(1) of title 49, United States Code, is amended by inserting “, including nonstructural aircraft systems,” after “life of aircraft”.

SEC. 8. ELIGIBILITY FOR AWARDS.

(a) **IN GENERAL.**—The Administrator of the Federal Aviation Administration shall exclude from consideration for grant agreements made by that Administration with funds appropriated pursuant to the amendments made by this Act any person who received funds, other than those described in subsection (b), appropriated for a fiscal year after fiscal year 1999, under a grant agreement from any Federal funding source for a project that was not subjected to a competitive, merit-based award process, except as specifically authorized by this Act. Any exclusion from consideration pursuant to this subsection shall be effective for a period of 5 years after the person receives such Federal funds.

(b) **EXCEPTION.**—Subsection (a) shall not apply to the receipt of Federal funds by a person due to the membership of that person in a class specified by law for which assistance is awarded to members of the class according to a formula provided by law.

(c) **DEFINITION.**—For purposes of this section, the term “grant agreement” means a legal instrument whose principal purpose is to transfer a thing of value to the recipient to carry out a public purpose of support or stimulation authorized by a law of the United States, and does not include the acquisition (by purchase, lease, or barter) of property or services for the direct benefit or use of the United States Government. Such term does not include a cooperative agreement (as such term is used in section 6305 of title 31, United States Code) or a cooperative research and development agreement (as such term is defined in section 12(d)(1) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a(d)(1))).

II. PURPOSE OF THE BILL

The purpose of the bill is to authorize the Federal Aviation Administration to conduct research and development activities for Fiscal Years 2000 and 2001. The projects improve the national air-

space system by increasing its safety, security, capacity, and productivity to meet the expected air traffic demands of the future.

III. BACKGROUND AND NEED FOR THE LEGISLATION

The FAA was created in 1958 to develop air commerce and promote safety in the air. As part of the Airport Development and Airway Trust fund established by Congress in 1982, it was decided that a comprehensive research and development program was necessary at FAA to maintain a safe, efficient air traffic system. In order to fund both these research and development programs and improve airport and airways capital improvements, a series of user fees and taxes were established.

The 100th Congress, seeking to strengthen the FAA research and development programs, enacted the 1988 Aviation Safety Research Act (P.L. 100-591), this bill created the FAA Research Advisory Board. The terrorist bombing of Pan Am Flight 103 demonstrated the need for new technology to detect explosives; and Congress subsequently passed the Aviation Safety Improvement Act of 1990 which required FAA to support activities to accelerate the research and development of new technologies to protect against terrorism.

Funding for FAA research and development activities was authorized for Fiscal Years 1998 and 1999 through P.L. 105-155. The current authorization expires at the end of Fiscal Year 1999.

IV. SUMMARY OF HEARINGS

On March 4, 1999, the Subcommittee on Technology held a hearing to review the Federal Aviation Administration (FAA) research and development budget request for Fiscal Year 2000 and beyond.

Mr. Zaidman, Associate Administrator for Research and Acquisitions, Federal Aviation Administration (FAA), testified that the FAA had increased its partnerships with industry, academia, and other government agencies. He testified that it has always been the agency goal to stress the importance of partnerships that leverage the use of available government research funds. Mr. Zaidman credited the FAA NASA partnership in research and technology as one of the backbones in the effort to improve aviation safety. He stated that both agencies are collaborating on aging aircraft and wake vortex research, as well as developing improved technologies for predicting wind shear, detecting aircraft icing, and detecting clear air turbulence. Mr. Zaidman also discussed the FAA's partnership with industry in the Safe Flight 21 program that when operational will provide critical weather and safety information directly to the cockpit. Mr. Zaidman concluded his testimony by discussing an innovative new runway safety system that has been installed at some airports to help prevent future incidents when aircraft may roll off the end of runways.

Ms. Stefani, Deputy Assistant Inspector General for Aviation, U.S. Department of Transportation, testified that the FAA is requesting \$173 million in R&D funding for FY2000. This is an increase of about 15% over the amount appropriated last year. Ms. Stefani testified that there have been some changes in how the FAA finances its R&D efforts. Specifically, significant amounts of development efforts for air traffic control have been funded from

the Facilities and Equipment account instead of the R&D. Ms. Stefani also stated that FAA and NASA research has produced very valuable aviation technology, like windshear radar. The FAA's work on the Standard Terminal Automation Replacement System (STARS), data link, and the deployment of new explosives detection systems, has underscored the need for FAA to take an early and active role in resolving human factors in the development of new technology. Ms. Stefani concluded that the Safe Flight 21 program is intended to test and validate technologies required for Free Flight by focusing on 9 operational enhancements, like display of terrain in the cockpit. Ms. Stefani stated that the FAA is requesting \$16 million for Safe Flight 21 for FY 2000.

Mr. Robert Frenzel, Senior Vice President for Aviation Safety and Operations, Air Transport Association of America, urged full funding out of the FAA's R&D FY 2000 Budget for the Safe Flight 21 program because it is an important step in the development and demonstration of new technologies that will be vital to Free Flight. Mr. Frenzel stated that Free Flight has been embraced by the FAA and the aviation community as the solution to projected growth in the National Airspace System in the future. He expanded on this point by adding that when fully implemented the Free Flight program will dramatically increase efficiency and reduce the costs associated with air travel.

Mr. Robert Doll, Chairman, FAA Research, Engineering and Development (RE&D) Advisory Committee (REDAC), testified that in general the REDAC is concerned about the level of the RE&D budgets that have been allocated to the FAA over the past several years. Mr. Doll stated that many of the REDAC members are very concerned that as a nation we are rapidly giving away our traditional lead in the aviation industry to European interests. He is particularly concerned with the strides that the Europeans have made in the area of Air Traffic Management. Mr. Doll stated that U.S. airlines are going to be faced with the choice of equipping their aircraft with dual avionics systems or flying them with European equipment set to European rules and standards.

V. COMMITTEE ACTIONS

On April 29, 1999, the full committee marked up the legislation (H.R. 1551) which was introduced by the Subcommittee Chairwoman, Mrs. Connie Morella. The legislation was adopted, as amended (by voice vote) and ordered reported to the full House for consideration (by voice vote). Amendments to the legislation were offered in the following order:

1. Manager's En Bloc Amendment offered by Mrs. Morella and Mr. Barcia to amend the following provisions within the Bill: Amend page 2, line 10, by striking "\$646,038,400" and inserting "\$647,538,400." Amend page 2, line 22, by striking "\$7,215,700" and inserting "\$8,715,700." Amend page 3, line 23, by striking "\$673,706,795" and inserting "\$675,706,795." Amend page 7, line 6, by striking "except as specifically authorized by this Act" after "award process." Finally, amend page 8, lines 3 through 22, by striking section 7. The amendment was adopted by voice vote.

2. Amendment offered by Mr. Gary Miller to expand FAA's aging aircraft research and development efforts by including non-structural components. The amendment was adopted by voice vote.

3. Amendment offered by Mr. Kuykendall to require the Administrator of the FAA to make available through the Internet home page of the FAA the abstracts relating to all research grants and awards made with funds authorized by the Act. The amendment was adopted by voice vote.

VI. SUMMARY OF MAJOR PROVISIONS OF THE BILL

The legislation authorizes \$648 million in FY2000 and \$675 million in FY2001 for the FAA to carry out research and development projects and activities. H.R. 1551 includes all FAA projects and activities that meet the definition of R&D as contained in Office of Management and Budget Circular A-11. H.R. 1271 also includes a provision requiring the FAA to include R&D technology transfer activities in the National Aviation Research Plan. Finally, the legislation protects our nation's investment in civil aviation research and development by including provisions to improve coordination of joint aviation safety research between the FAA and NASA.

VII. SECTION-BY-SECTION ANALYSIS (BY TITLE AND SECTION) AND COMMITTEE VIEWS

SECTION 1. SHORT TITLE

Cites this title as the "Civil Aviation Research and Development Authorization Act of 1999".

SECTION 2. AUTHORIZATION OF APPROPRIATIONS

Authorizes appropriations for fiscal year 2000 of \$646,038,400 for Federal Aviation Administration R&D activities as follows:

(A) Authorizes \$17,269,000 for system development and infrastructure projects and activities.

(B) Authorizes \$48,021,500 for capacity and air traffic management technology projects and activities.

(C) Authorizes \$18,939,200 for communications, navigation, and surveillance projects and activities.

(D) Authorizes \$15,765,000 for weather projects and activities.

(E) Authorizes \$7,215,700 for airport technology projects and activities.

(F) Authorizes \$39,639,000 for aircraft safety technology projects and activities.

(G) Authorizes \$53,218,000 for system security technology projects and activities.

(H) Authorizes \$26,207,000 for human factors and aviation medicine projects and activities.

(I) Authorizes \$3,481,000 for environment and energy projects and activities.

(J) Authorizes \$2,171,000 for innovative/cooperative research projects and activities, of which \$750,000 shall be carrying-out the research grants program involving undergraduate students.

(K) Authorizes \$266,712,000 for En Route research and development projects and activities.

(L) Authorizes \$58,900,000 for Terminal research and development projects and activities.

(M) Authorizes \$3,000,000 for Flight Services research and development projects and activities.

(N) Authorizes \$69,200,000 for Landing and Navigation research and development projects and activities.

(O) Authorizes \$16,300,000 for Equipment and Facilities research and development projects and activities.

For fiscal year 2001, the legislation authorizes a lump-sum of \$675,706,795 for research and development projects and activities.

Committee view

Currently, FAA's R&D activities are funded from two major budget categories: the Research, Engineering, and Development (RE&D) account; and "Engineering, Development, Test, and Evaluation" of the Facilities and Equipment (F&E) account. According to testimony from the FAA and the Department of Transportation Inspector General (DOT IG) projects and activities funded under Category 1 of the F&E account can be classified as research and development as defined by the Office of Management and Budget (OMB). OMB Circular A-11, Budget Formation/Submission Processes, which provides guidelines to the federal agencies used in reporting data on R&D budgets, specifies that R&D budgets should be divided into the categories of basic research, applied research, and development, where development is defined as "systematic use of the knowledge gained from research for the production of useful materials, devices, systems, or methods, including the design and development of prototypes and processes."

The Committee believes that maintaining separate R&D accounts makes it considerably more difficult for Congress to track overall FAA R&D investment and to access the priorities among areas of R&D. The current arrangement is confusing and lacks consistency. Therefore, the projects and activities of the RE&D account and the F&E Category 1 are authorized together in the legislation.

Of the amounts made available for capacity and air traffic management technology projects and activities, the Committee recommends that \$16 million be used to carry-out Safe Flight 21 in Fiscal Year 2000, and an additional \$30 million be used in Fiscal Year 2001 for this important project. The Committee did not authorize the project in FY1999. This year, however, the FAA scaled-back the project's size, achieved industry consensus and support, and provided the Committee with a better accounting as to why the project is critical to achieving the agency's efficiency goals for the 21st Century. Based in large part on the agency's efforts to restructure the project and the corresponding support it now receives from industry, including the FAA Research, Engineering and Development Advisory Committee, the Committee supports the project at the level requested.

Of the amounts authorized for Airport Technology projects and activities in FY2000, the Committee intends that at least \$1,500,000 shall be for obligation for grants or cooperative agreements awarded through a competitive, merit-based process to carry out research on innovative methods of using concrete in the design, construction, rehabilitation, and repair of rigid airport pavements.

To the extent practicable, the Administrator shall consider awards to universities, and non-profit research foundations that would ensure industry participation. Of the amounts authorized to be appropriated for Airport Technology projects and activities in FY2001, the Committee intends that at least \$2,000,000 shall be for this purpose. The Committee recognizes that taxpayers spend \$2 billion dollars a year on runway pavements construction and maintenance. Investing today in research to develop longer-lasting and more reliable runways has the potential to save millions of dollars later.

In the area of Environment and Energy research projects and activities, the Committee shares the goal the FAA has established of reducing the impact of aircraft noise 80% by the year 2000 and fully funds the budget request for these projects and activities. The Committee supports FAA's aircraft noise reduction and control research efforts and recommends that the agency continue the FAA/NASA joint cooperative noise reduction research programs intended to identify feasible technologies for U.S. manufacturers to develop quieter jet airplanes, helicopters, and light propeller-driven airplanes. In addition, the Committee recommends that the FAA continue to examine and validate the methodologies used to assess aircraft noise exposure and impact.

In the area of innovative/cooperative research, the Committee is concerned that current FAA university research agreements underutilize the research capabilities available at primarily undergraduate institutions. The \$750,000 increase over the request is for the FAA to carry-out the program established in P.L. 105-155 for awarding grants to support research projects to be carried out at primarily undergraduate institutions on subjects of relevance to the FAA.

In the area of aircraft security, the Committee is pleased that the combined research and development efforts of the Federal Government, universities and the private sector have yielded advanced technologies to help prevent potential terrorists from possessing concealed explosive devices, weapons and other items on commercial aircraft. However, the Committee is concerned that little work has been completed to protect commercial aircraft from catastrophic structural or critical system failure due to inflight explosion. Efforts to mitigate blast, either through retrofitting the current fleet or by instituting new design techniques and materials, need to be identified. The Committee is pleased that the FAA has prioritized funding research and development on aircraft hardening in this year's budget request and, therefore, provides adequate funding at the level requested for these important projects and activities to be carried-out.

The Committee recognizes that Weather is the single largest contributor to delays and a major factor in aircraft accidents and incidents. By fully funding the budget request for Weather, the Committee is supportive of the FAA's efforts to provide the capability to generate weather observations, warnings, and forecasts that are more accurate and accessible than existing weather services. These upgrades enhance flight safety, increase system capacity, improve flight efficiency, reduce air traffic controller and pilot workload and enhance situational awareness.

The Committee recognizes that in the increasingly complex realm of aviation, human factors issues must be considered in every aspect of modern flight operations whether in the way that humans interact with machines or with one another. Never before has the Federal Aviation Administration faced such an evolutionary change in the way it handles passenger and air traffic. These considerations involve technology employed in security screening; in movement of aircraft on the ground; in communication between controllers and crew; and during en route navigation.

The Committee recognizes that the FAA has failed to conduct adequate human factors research on projects and activities in the past. The Standard Terminal Automation Replacement System (STARS) has suffered years of delay and hundreds of millions of dollars in cost over-runs because human factors weren't adequately considered. The Committee recommends that the FAA heed this valuable, albeit expensive lesson, and fully consider human factors research as a precursor to the design, development, acquisition, and deployment of new technologies in support of their mission to improve aviation safety, efficiency, and security for the traveling public.

The Committee further recommends that FAA consider any and all possible applications for human factors research in the on-going development and eventual deployment of: the Global Positioning System (GPS) for en route navigation and Free Flight; the Airport Movement Area Safety System (AMASS) and Surface Movement Advisor (SMA) for ground control; and Data Link as means to exchange information between Air Traffic Controllers and aircraft crew; security profiling software and threat detection hardware. Additionally, the Committee is concerned about reports of lapsed security in recent tests of airport personnel. The Committee recommends that FAA use basic behavioral research, reinforcement contingencies and empirical performance evaluations to ensure that airport personnel: maintain security of controlled access areas; use profiling software as intended; and conduct baggage inspections accurately.

In the area of safety, the Committee recognizes that 1998 was the first year in FAA history without a fatality on a scheduled domestic air carrier and applauds this milestone. However, the Committee also notes that historic trends would suggest this is an anomaly and urges FAA to reinvigorate human factors research to promote aviation safety, as human error is still the dominant cause of aviation accidents. The Committee recognizes that regardless of how advanced the technology, humans must still interpret and act upon information in the cockpit and the control tower to guide aircraft safely from the departure to the arrival gate. The incidence of runway incursions has been rising steadily for the past 6 years and operational errors were at a five-year high in 1998. Additional human factors research or the application of existing research results should be used to reverse these alarming trends.

The Committee recognizes that there are complex questions and remaining uncertainties surrounding various technical, vulnerability, cost and schedule issues as the United States undertakes the transition to satellite technology. In testimony this year, the DOT IG and others have indicated that a mix of ground-based

navigation systems will be needed for the foreseeable future. The Committee is convinced that Loran has a role as part of that future navigation mix because it is cost-effective, proven and reliable; it is complementary with satellite technology and it provides multimodal transportation, national infrastructure and other benefits. Moreover, Congress has supported numerous actions in recent years to automate, modernize and revitalize the Loran system and the Committee is aware that important developments are being made with Loran technology to enable integrated use of Loran and GPS, resulting in a higher performance, more robust hybrid navigation system. The Committee, therefore, recommends the FAA to undertake additional R&D work to permit full use of the complementary benefits of Loran and satellite technology working together in the future.

The Committee points out that the Aviation Safety Research Act (P.L. 100-591) required the FAA to create and maintain a "Research Advisory Committee" to provide advice and recommendations to the Administrator among the major categories of research and development carried out by the agency. The Committee believes that the scope of the advisory committee should in no way be limited to the projects and activities of the Research, Engineering and Development account. Further, the Committee recognizes that the responsibilities associated with serving on advisory committee are very time-consuming and the Committee wishes to express its sincere gratitude to the members for their important efforts to assist the agency and Congress.

The Committee appreciates the cooperation that FAA has demonstrated in responding to the findings of the National Transportation Safety Board. However, the Committee is concerned that the FAA response has been inadequate in several areas and recommends that the regulatory and research functions of the FAA be more closely guided by NTSB recommendations in the future.

Additionally, the Committee urges the FAA and the Administration to remove or bypass the legal hurdles blocking the successful implementation of industry-wide Flight Quality Assurance Programs (FOQA). Such voluntary programs provide an invaluable database for evaluating aircraft systems and human performance during in-flight anomalies. Such information could be used to design and test improved pilot-training programs, much as the suspected rudder-deflections in Boeing 737's resulted in a successful remedial pilot training program to recognize and counteract the emergency.

SECTION 3. BUDGET DESIGNATION FOR RESEARCH AND DEVELOPMENT ACTIVITIES

Requires that future FAA budgets identify all research and development activities that would be classified as basic research, applied research, or developmental under the guidelines established by the Office of Management and Budget Circular A-11 regardless of the budget category in which it appears in the budget request.

Committee view

As discussed earlier, the Committee believes that maintaining separate R&D accounts makes it considerably more difficult for

Congress to track overall FAA R&D investment and to assess the priorities among areas of R&D. The current arrangement is confusing and lacks consistency. The Committee expects future budget submissions from the FAA to identify all research and development activities that would be classified as basic research, applied research, or developmental under the guidelines established by the Office of Management and Budget Circular A-11 regardless of the budget category in which it appears in the budget request.

SECTION 4. NATIONAL AVIATION RESEARCH PLAN

Revises the requirements for the National Aviation Research Plan by requiring the plan to document the FAA's research and development technology transfer activities.

Committee view

The Committee has a long history of support for technology transfer activities that improve United States competitiveness by speeding commercialization of inventions developed through collaborative agreements between the government and industry. Pursuant to the Committee's interest in this area, the legislation requires the FAA to include in the National Aviation Research Plan a more detailed accounting of the agency's R&D technology transfer activities.

SECTION 5. INTEGRATED SAFETY PLAN

Requires NASA and FAA to jointly prepare and transmit to Congress an integrated civil aviation safety research and development plan by March 1, 2000. The plan is required to include the identification of the agencies' roles and responsibilities in support of safety R&D; formal mechanisms for the timely sharing of information between the two agencies; and procedures for increased communication between the FAA Research and Development Advisory Committee and NASA Aeronautics and Space Transportation Technology Advisory Committee.

Committee view

The FAA has pledged to reduce the fatal aviation accident rate by 80% by the year 2007 and has joined NASA to develop a coordinated Aviation Safety Plan (ASP). The Committee applauds this joint effort but is concerned about inter-agency and intra-agency coordination of these efforts. Both FAA and NASA are in the process of revising their Advisory Committee Structure in an effort to facilitate the implementation of the ASP. However, it is unclear when this process will be completed; how the resulting subcommittee structure will be used in the planning, development, and execution of a joint safety research agenda; and how human factors research issues germane to the resolution of human error would be considered across subcommittees, committees and agencies. The Committee urges FAA to work with NASA to complete this reorganization clearly defining the roles and responsibilities of the resulting subcommittees and their members.

SECTION 6. INTERNET AVAILABILITY OF INFORMATION

The Section requires the FAA to post on its Internet home page the abstracts relating to all research grants and awards made with funds authorized by this Act.

Committee view

The Committee believes that such steps are necessary to ensure public access to research and development grant information. Making this information more readily available also improves the Committee's ability to provide responsible oversight.

SECTION 7. RESEARCH ON NONSTRUCTURAL AIRCRAFT SYSTEMS

This section requires the FAA to expand its current aging aircraft research and development projects and activities to include non-structural components.

Committee view

The average age of commercial airline fleets is continuing to increase. For instance, 2,500 commercial aircraft in operation everyday in the United States are probably at least twenty years-old. From a design and engineering standpoint, the aircraft may be structurally sound, but several safety experts, including the National Transportation Safety Board, have raised concerns about the performance and reliability of the various non-structural components of aging aircraft. The non-structural components of aging aircraft include electrical wiring, hydraulic lines and certain other electro-mechanical systems.

In February of 1997, the White House Commission on Aviation and Security recommended that the FAA work with airlines and manufacturers to expand the aging aircraft program to include non-structural components. To date, the Committee is concerned that little has been done to implement the recommendation. The Committee is further concerned that the FAA is not doing a good enough job to prevent safety related problems caused by the corrosive and deteriorating effects of non-structural components of commercial aircraft as they age. The Committee directs the FAA to place a higher priority on the research and testing of non-structural components in the agency's aging aircraft program.

SECTION 8. ELIGIBILITY FOR AWARDS

(a) Requires the FAA Administrator to exclude from consideration for grant agreements for marine research and related environmental research and development activities made after FY 1999 by the FAA, under the programs for which funds are authorized under this Act, any person who received funds, other than those described in subsection (b), appropriated for a fiscal year after FY 1999, under a grant agreement from any Federal funding source for a project that was not subjected to a competitive, merit-based award process. Any exclusion from consideration pursuant to this section shall be effective for a period of 5 years after the person received such Federal funds.

(b) Subsection (a) shall not apply to the receipt of Federal funds by a person due to the membership of that person in a class speci-

fied by law for which assistance is awarded to members of the class according to a formula provided by law.

(c) Defines the term “grant agreement” to mean a legal instrument whose principal purpose is to transfer a thing of value to the recipient to carry out a public purpose of support or stimulation authorized by a law of the United States, and does not include the acquisition (by purchase, lease, or barter) of property or services for the direct benefit or use of the United States Government. Such term also does not include a cooperative agreement (as such term is used in section 6305 of title 31, United States Code) or a cooperative research and development agreement (as such term is defined in section 12(d)(1) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a(d)(1))).

Committee view

The Committee has a long-standing position that awards should be based on a competitive merit-based process. Merit review allows taxpayers’ dollars to be spent in the most cost-effective manner.

VIII. COST ESTIMATE

Rule XIII, clause 3(d)(2) of the House of Representatives requires each committee report accompanying each bill or joint resolution of a public character to contain: (1) an estimate, made by such committee, of the costs which would be incurred in carrying out such bill or joint resolution in the fiscal year in which it is reported, and in each of the five fiscal years following such fiscal year (or for the authorized duration of any program authorized by such bill or joint resolution, if less than five years); (2) a comparison of the estimate of costs described in subparagraph (1) of this paragraph made by such committee with an estimate of such costs made by any Government agency and submitted to such committee; and (3) when practicable, a comparison of the total estimated funding level for the relevant program (or programs) with the appropriate levels under current law. However, House Rule XIII, clause 3(d)(3)(B) provides that this requirement does not apply when a cost estimate and comparison prepared by the Director of the Congressional Budget Office under section 402 of the Congressional Budget Act of 1974 has been timely submitted prior to the filing of the report and included in Section IX of this report pursuant to House Rule VIII, clause 3(c)(3).

Rule XIII, clause 3(c)(2) of the House of Representatives requires each committee report that accompanies a measure providing new budget authority (other than continuing appropriations), new spending authority, or new credit authority, or changes in revenues or tax expenditures to contain a cost estimate, as required by section 308(a)(1) of the Congressional Budget Act of 1974 and, when practicable with respect to estimates of new budget authority, a comparison of the total estimated funding level for the relevant program (or programs) to the appropriate levels under current law. H.R. 1551 does not contain any new budget authority, credit authority, or changes in revenues or tax expenditures. Assuming that the sums authorized under the bill are appropriated, H.R. 1551 does authorize additional discretionary spending, as described in

the Congressional Budget Office report on the bill, which is contained in Section IX of this report.

IX. CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, May 13, 1999.

Hon. F. JAMES SENSENBRENNER, Jr.,
Chairman, Committee on Science, House of Representatives, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 1551, the Civil Aviation Research and Development Authorization Act of 1999.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contacts are Victoria Heid Hall (for federal costs), and Lisa Cash Driskill (for the state and local impact).

Sincerely,

DAN L. CRIPPEN, *Director.*

Enclosure.

H.R. 1551—Civil Aviation Research and Development Authorization Act of 1999

Summary: H.R. 1551 would authorize the appropriation of \$648 million in fiscal year 2000 and \$676 million in fiscal year 2001 for the Federal Aviation Administration's (FAA's) civil aviation research and development (R&D) programs. The bill also would direct the FAA to exclude from consideration for grant agreements any person who received funds after fiscal year 1999 under a grant agreement for a project that was not subject to a competitive, merit-based award process.

CBO estimates that implementing H.R. 1551 would result in outlays of \$1,324 million over the 2000–2004 period, assuming appropriation of the authorized amounts. Because the bill would not affect direct spending or receipts, pay-as-you-go procedures would not apply. H.R. 1551 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments.

Estimated cost to the Federal Government: CBO estimates that implementing the bill would result in additional outlays of \$256 million in fiscal year 2000 and a total of \$1,324 million over the 2000–2004 period, assuming appropriation of the authorized amounts. H.R. 1551 specifies that appropriations made under the bill's authorizations be used for all R&D activities carried out by FAA that fall within the categories of basic research, applied research, and design and development of prototypes. The estimated budgetary impact of H.R. 1551 is shown in the following table. The costs of this legislation fall within budget function 400 (transportation).

	By fiscal years, in millions of dollars—					
	1999	2000	2001	2002	2003	2004
SPENDING SUBJECT TO APPROPRIATION						
FAA Spending on R&D Under Current Law:						
Budget Authority ¹	623	0	0	0	0	0
Estimated Outlays	624	373	150	43	0	0
Proposed Changes:						
Authorization Level	0	648	676	0	0	0
Estimated Outlays	0	256	517	361	150	40
FAA Spending on R&D Under H.R. 1551:						
Authorization Level ¹	623	648	676	0	0	0
Estimated Outlays	624	629	667	404	150	40

¹The 1999 level is the amount appropriated for that year.

H.R. 1551 would direct the FAA to exclude from consideration for grant agreements any person who received funds after fiscal year 1999 under a grant agreement from any federal funding source for a project that was not subjected to a competitive, merit-based award process. The bill would place the exclusion in effect for five years after the person received such funds. Based on information from FAA, we expect that implementing this provision would require the agency to revise its process for reviewing and awarding grants and would temporarily slow down the rate at which the agency spends its grants funds, resulting in slightly lower estimated outlays for fiscal year 2000 than would otherwise occur (without the new process for awarding grants). However, CBO estimates that this provision would have no net effect on outlays over the 2000–2004 period.

Pay-as-you-go considerations: None.

Estimated impact on State, local and tribal governments: H.R. 1551 contains no intergovernmental mandates as defined in UMRA and would impose no costs on state, local, or tribal governments. A total of about \$70 million of the funds authorized in this bill would be used to provide grants, some of which would be used for research at public universities and technical institutions.

The bill would also exclude grantees from consideration for awards if they had received funds under any other federal grant program that was not subject to a competitive, merit-based award process after fiscal year 1999. This provision could change the allocation of funds among grant recipients, including public colleges and universities. However, CBO cannot predict how the share of funding awarded to public colleges and universities would change because of this provision.

Estimated impact on the private sector: This bill contains no new private-sector mandates as defined in UMRA.

Estimate prepared by: Federal costs: Victoria Heid Hall. Impact on State, local, and tribal governments: Lisa Cash Driskill.

Estimate approved by: Paul N. Van de Water, Assistant Director for Budget Analysis.

X. COMPLIANCE WITH PUBLIC LAW 104–4

H.R. 1551 contains no unfunded mandates.

XI. COMMITTEE OVERSIGHT FINDINGS AND RECOMMENDATIONS

Rule XIII, clause 3(c)(1) of the House of Representatives requires each committee report to include oversight findings and recommendations required pursuant to clause 2(b)(1) of rule X. The Committee on Science's oversight findings and recommendations are reflected in the body of this report.

XII. OVERSIGHT FINDINGS AND RECOMMENDATIONS BY THE COMMITTEE ON GOVERNMENT REFORM AND OVERSIGHT

Rule XIII, clause 3(c)(4) of the House of Representatives requires each committee report to contain a summary of the oversight findings and recommendations made by the House Government Reform Committee pursuant to clause 4(c)(2) of rule X, whenever such findings and recommendations have been submitted to the Committee in a timely fashion. The Committee on Science has received no such findings or recommendations from the Committee on Government Reform.

XIII. CONSTITUTIONAL AUTHORITY STATEMENT

Rule XIII, clause 3(d)(1) of the House of Representatives requires each report of a committee on a bill or joint resolution of a public character to include a statement citing the specific powers granted to the Congress in the Constitution to enact the law proposed by the bill or joint resolution. Article I, section 8 of the Constitution of the United States grants Congress the authority to enact H.R. 1551.

XIV. FEDERAL ADVISORY COMMITTEE STATEMENT

H.R. 1551 does not establish nor authorize the establishment of any advisory committee.

XV. CONGRESSIONAL ACCOUNTABILITY ACT

The Committee finds that H.R. 1551 does not relate to the terms and conditions of employment or access to public services or accommodations within the meaning of section 102(b)(3) of the Congressional Accountability Act (Public Law 104–1).

XVI. PREEMPTION OF STATE, LOCAL OR TRIBAL LAW

H.R. 1551 does not preempt State, local or tribal law.

XVII. CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 3(e) of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in *italic*, existing law in which no change is proposed is shown in roman):

TITLE 49, UNITED STATES CODE

* * * * *

SUBTITLE VII—AVIATION PROGRAMS

* * * * *

PART A—AIR COMMERCE AND SAFETY

* * * * *

SUBPART III—SAFETY

* * * * *

CHAPTER 445—FACILITIES, PERSONNEL, AND RESEARCH

* * * * *

§ 44501. Plans and policy

(a) * * *

* * * * *

(c) NATIONAL AVIATION RESEARCH PLAN.—(1) * * *

(2)(A) * * *

(B) The plan shall—

(i) * * *

* * * * *

(iii) identify the allocation of resources among long-term research, near-term research, and development activities; **[and]**

(iv) highlight the research and development activities that address specific recommendations of the research advisory committee established under section 44508 of this title, and document the recommendations of the committee that are not accepted, specifying the reasons for nonacceptance~~...~~; *and*

(v) *highlight the research and development technology transfer activities that promote technology sharing among government, industry, and academia through the Stevenson-Wydler Technology Innovation Act of 1980.*

(3) Subject to section 40119(b) of this title and regulations prescribed under section 40119(b), the Administrator of the Federal Aviation Administration shall submit to the committees named in paragraph (1) of this subsection an annual report on the accomplishments of the research completed during the prior fiscal year, including a description of the dissemination to the private sector of research results and a description of any new technologies developed. The report shall be submitted with the plan required under paragraph (1) and be organized to allow comparison with the plan in effect for the prior fiscal year. *The report shall be prepared in accordance with requirements of section 1116 of title 31, United States Code.*

* * * * *

§ 44504. Improved aircraft, aircraft engines, propellers, and appliances

(a) * * *

(b) RESEARCH.—The Administrator shall conduct or supervise research—

(1) to develop technologies and analyze information to predict the effects of aircraft design, maintenance, testing, wear, and fatigue on the life of aircraft, *including nonstructural aircraft systems*, and air safety;

* * * * *

PART C—FINANCING

CHAPTER 481—AIRPORT AND AIRWAY TRUST FUND AUTHORIZATIONS

* * * * *

§ 48102. Research and development

(a) AUTHORIZATION OF APPROPRIATIONS.—Not more than the following amounts may be appropriated to the Secretary of Transportation out of the Airport and Airway Trust Fund established under section 9502 of the Internal Revenue Code of 1986 (26 U.S.C. 9502) to carry out sections 44504, 44505, 44507, 44509, and 44511–44513 of this title:

(1) * * *

* * * * *

(4) for fiscal year 1998, \$226,800,000, including—

(A) * * *

* * * * *

(J) \$3,114,000 for innovative/cooperative research projects and activities, of which \$750,000 shall be for carrying out the grant program established under subsection (h); **[and]**

(5) for fiscal year 1999, \$229,673,000 **[.];**

(6) for fiscal year 2000, \$647,538,400 including—

(A) \$17,269,000 for system development and infrastructure projects and activities;

(B) \$48,021,500 for capacity and air traffic management technology projects and activities;

(C) \$18,939,200 for communications, navigation, and surveillance projects and activities;

(D) \$15,765,000 for weather projects and activities;

(E) \$8,715,700 for airport technology projects and activities;

(F) \$39,639,000 for aircraft safety technology projects and activities;

(G) \$53,218,000 for system security technology projects and activities;

(H) \$26,207,000 for human factors and aviation medicine projects and activities;

(I) \$3,481,000 for environment and energy projects and activities;

(J) \$2,171,000 for innovative/cooperative research projects and activities, of which \$750,000 shall be for carrying out subsection (h) of this section;

- (K) \$266,712,000 for *En Route* research and development projects and activities;
 - (L) \$58,900,000 for *Terminal* research and development projects and activities;
 - (M) \$3,000,000 for *Flight Services* research and development projects and activities;
 - (N) \$69,200,000 for *Landing and Navigation* research and development projects and activities; and
 - (O) \$16,300,000 for *Equipment and Facilities* research and development projects and activities; and
- (7) for fiscal year 2001, \$675,706,795.

* * * * *

(g) DESIGNATION OF ACTIVITIES.—(1) *The amounts appropriated under subsection (a) are for the support of all research and development activities carried out by the Federal Aviation Administration that fall within the categories of basic research, applied research, and development, including the design and development of prototypes, in accordance with the classifications of the Office of Management and Budget Circular A-11 (Budget Formulation/ Submission Process).*

(2) *The Department of Transportation's annual budget request for the Federal Aviation Administration shall identify all of the activities carried out by the Administration within the categories of basic research, applied research, and development, as classified by the Office of Management and Budget Circular A-11. Each activity in the categories of basic research, applied research, and development shall be identified regardless of the budget category in which it appears in the budget request.*

* * * * *

XVIII. COMMITTEE RECOMMENDATIONS

On April 29, 1999, a quorum being present, the Committee favorably reported H.R. 1551, Civil Aviation Research and Development Authorization Act of 1999, by a voice vote, and recommends its enactment.

XIX. EXCHANGE OF COMMITTEE CORRESPONDENCE

HOUSE OF REPRESENTATIVES,
 COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
 Washington, DC, June 24, 1999.

Hon. F. JAMES SENSENBRENNER, Jr.,
 Chairman, Committee on Science, House of Representatives, Rayburn House Office Building, Washington, DC.

DEAR MR. CHAIRMAN: I have reviewed the text of H.R. 1551, the Civil Aviation Research and Development Act of 1999, and I believe that the Committee on Transportation and Infrastructure has jurisdiction over several items contained in the bill. Specifically, these are the authorizations for En Route, Terminal, Flight Service, Landing and Navigation, and Equipment and Facilities programs included in Section 2. I will, however, forego a sequential referral on this bill with the understanding that a floor amendment removing these provisions from H.R. 1551 will be adopted.

Traditionally, the Transportation Committee has authorized the above equipment deployment functions from the Federal Aviation Administration Facilities and Equipment (F&E) account. In fact, H.R. 1000, the Aviation Investment and Reform Act for the 21st Century (AIR 21), which passed the House on June 15th, provides authorizations for these functions for fiscal years 2000 to 2004.

I recognize that, last year, some functions under the jurisdiction of the Science Committee were moved from the FAA Research, Engineering and Development (RED) account to the F&E account through the annual appropriations process. While I believe that these unauthorized appropriations do not have any bearing on committee jurisdiction, I prefer that the Appropriations Committee adhere to the authorizing language and refrain from moving functions from the RED account to the F&E account in order to benefit from the slower spend out rate. For example I would prefer that Advanced Technology Development and Prototyping program remain in the RED account.

Historically, the Science Committee has had oversight and authorization responsibility over the RED account while the Transportation Committee has had oversight and authorization responsibility over the F&E account. I believe that continuing this practice is the best way to preserve the jurisdiction of both Committees.

I thank you for your attention to this matter and look forward to working with you and your staff.

With warm personal regards, I am
Sincerely,

BUD SHUSTER,
Chairman.

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE,
Washington, DC, June 29, 1999.

Hon. BUD SHUSTER,
*Chairman, House Committee on Transportation and Infrastructure,
Rayburn House Office Building, Washington, DC.*

DEAR CHAIRMAN SHUSTER: Thank you for your letter of June 24, 1999, regarding H.R. 1551, the Civil Aviation Research and Development Act of 1999. Your assistance in expediting consideration of the bill by foregoing a sequential referral is very much appreciated. It is my intention to include this exchange of correspondence in the Committee Report accompanying H.R. 1551.

As you correctly point out in your letter, jurisdiction over the Federal Aviation Administration's research and development portfolio has traditionally been defined by the agency's budget accounts. In the case of FAA's Research, Engineering and Development account (RE&D), the Science Committee has traditionally exercised legislative, authorization, and oversight responsibility, while the Transportation Committee has focused on functions contained in the Facilities and Equipment (F&E) account.

It is my intention to bring H.R. 1551 to the House for consideration in the near future. To address concerns raised with H.R. 1551, I am willing to strike the provisions of the legislation which have traditionally been authorized by the Transportation and In-

frastructure Committee through F&E, while maintaining the provisions authorizing projects and activities traditionally authorized by the Science Committee through RE&D. Specifically, as part of a Manager's Amendment offered during House consideration of H.R. 1551, provisions authorizing funding for the En Route, Terminal, Flight Services, Landing and Navigation, and Equipment and Facilities functions of the F&E account would be dropped. Recognizing that the Advanced Technology Development and Prototyping function of the F&E account contains activities traditionally funded through the RE&D account, H.R. 1551 would retain \$33,166,100 for these purposes. Proceeding in this manner clarifies that H.R. 1551 does not authorize funding for any activities that conflict with or duplicate provisions of H.R. 1000, the Aviation Investment and Reform Act for the 21st Century.

I appreciate your willingness to recognize that shifting items during the appropriations process from one account to another without changing their fundamental purpose should not impact the jurisdiction over these projects and activities. As a matter of practice, the Science Committee has limited our jurisdictional interest to the RE&D account, and, with the noted exception above, H.R. 1551 (as amended by the Manager's Amendment) continues this arrangement for the foreseeable future.

I look forward to working with you in the future to advance our Nation's investment in civil aviation research and development. Thank you for your cooperation and assistance.

Sincerely,

F. JAMES SENSENBRENNER, Jr.,
Chairman.

XX. PROCEEDINGS OF THE FULL COMMITTEE MARKUP

FULL COMMITTEE MARKUP ON H.R. 1551, CIVIL AVIATION RESEARCH AND DEVELOPMENT AUTHORIZATION ACT OF 1999, COMMITTEE ON SCIENCE, HOUSE OF REPRESENTATIVES, APRIL 29, 1999

The Committee met, pursuant to notice, at 9:39 a.m., in room 2318, Rayburn House Office Building, Hon. F. James Sensenbrenner (chairman of the committee) presiding.

Chairman SENSENBRENNER [presiding]. The Committee on Science will be in order.

And, pursuant to notice, the Committee on Science is meeting today to consider the following: H.R. 1551, the Civilian Aviation Research and Development Authorization Act of 1999; H.R. 1550, the Fire Administration Authorization Act of 1999; H.R. 1552, the Marine Research and Related Environmental Research and Development Programs Authorization Act of 1999; and H.R. 1553, the National Weather Service and Related Agencies Authorization Act of 1999.

I ask unanimous consent for the authority to recess at any point and, without objection, it is so ordered.

Today we have four items of business to bring before the Committee, which are the four bills that I have mentioned just a couple of breaths ago. The first bill we will take up is H.R. 1551, the Civilian Research and Development Authorization Act of 1999. At this

point, I will yield to the gentleman from Illinois, Mr. Costello, if he wants to make brief opening remarks on behalf of the minority.

Mr. COSTELLO. Mr. Chairman, thank you. As you know, Chairman Brown, the Ranking Member, is under the weather today and, unfortunately, could not be here. I would just like unanimous consent to insert his statement in the record at this time.

Chairman SENSENBRENNER. Okay. Without objection.
[The statement of Mr. Brown follows:]

OPENING STATEMENT OF CONGRESSMAN GEORGE E. BROWN, JR.

Mr. Chairman, I wish to express our pleasure in being able to mark up four significant pieces of legislation this week and look forward to productive markups next week and the week after. Since there are a number of amendments which will take time to consider this morning, I will defer to the Subcommittee Ranking Members regarding the specifics of the bills before us, but I hope the Chairman will not mind if I take a minute or two at this time to note his cooperation on the process of this markup.

For over three decades this Committee was known as a model of bipartisanship regardless of what was happening in the rest of the Congress. This is a reputation we wish to regain. There is no such thing as Republican science or Democratic science. There is much that we can accomplish and that everyone can agree on if we work together. We have a talented group of Members on both sides of the aisle who have personal expertise and are looked upon by our colleagues as leaders on other issues as well as science and technology. But to lead, we must be informed enough to engaged in meaningful debate on the issues.

Therefore, we are pleased that you have seen fit to provide all of the Members of this Committee with drafts of the legislation to be considered today far enough in advance of the markup that we can give them thoughtful consideration. We are even more pleased that we already have copies of the legislation to be considered next week. This is a very promising start to an improved working relationship and we will work just as hard to uphold our part of a fair and orderly process.

Chairman SENSENBRENNER. And, without objection at this point, other members' opening statements which are not specifically related to bills will be inserted into the record. And when we get to opening statements on bills, then that will be a proper point to put those in. So, without objection, other members' general opening statements will be inserted at this point in the record.

The first bill up is H.R. 1551. This bill authorizes the FAA to carry out research and development projects and activities for Fiscal Years 2000 and 2001. The FAA's R&D efforts assist the agency to develop and validate the technology and knowledge required to ensure the safety, efficiency, and security of our national air transportation system.

The FAA currently funds its R&D activities from two separate budget accounts: the research, engineering, and development account and the engineering, development test and evaluation category of the facilities and equipment account. Although traditionally these accounts have been authorized separately, all of the projects and activities meet the definition of development as contained in OMB circular A-11. Therefore, H.R. 1551 includes all FAA R&D projects and activities in a single authorization.

Overall, this bill meets the Administration's budget request by authorizing \$648 million in Fiscal Year 2000 and \$675 million in Fiscal Year 2001, for the FAA to carry out research and development projects and activities. Finally, the legislation continues the Science Committee's commitment to providing responsible oversight that protects our nation's investment in civil aviation R&D by including provisions to improve coordination of joint aviation safety

research between the FAA and NASA. And that encourages the utilization of grants based upon a competitive, merit-based award process.

I would like to commend the Chairwoman of the Technology Subcommittee, Ms. Morella, and the Ranking Member of the Committee, Mr. Barcia, for their efforts in crafting this legislation. And I note that neither one of them are on time today so, you know, without objection, both of their opening statements will appear first in the record and, without objection, any other members' opening statements will appear after those of Ms. Morella and Mr. Barcia.

STATEMENT OF HON. JAMES A. BARCIA

I want to join Chairman Sensenbrenner, Chairwoman Morella, and Ranking Member Brown in supporting this legislation. For the sake of time, I will make my remarks brief.

During my tenure as the Ranking member on the Technology Subcommittee, it has become apparent that the FAA's budget presentation does not provide a complete overview of its R&D activities and priorities, nor does its National Aviation Research Plan provide a comprehensive framework for its R&D programs.

A recent letter to Administrator Garvey from the Chairman of FAA's R, E&D Advisory Committee further supports this contention, saying that "with the R&D funding and responsibilities for implementation separated into so many different pots, the R&D management, focus, and effort have been seriously compromised."

With its relatively small R&D budget, the FAA must allocate its funds efficiently and effectively. The FAA's R&D activities, while a small part of the overall budget, have a disproportionate influence on the ability of the agency to meet its responsibilities for the management and operation of the national airspace system. The FAA's R&D programs must provide the underpinnings for the technology that will help increase the capacity and efficiency of operation for the airspace system, while ensuring safety and system security.

Therefore, I was pleased to work with Chairwoman Morella in drafting a comprehensive R&D bill for the Federal Aviation Administration, and HR 1551 is an attempt to address the serious concerns raised by the FAA's R, E&D Advisory Committee.

We have worked with the majority to draft this amendment in the nature of a substitute, and I urge its support, as well as the support of HR 1551.

OPENING STATEMENT BY HON. F. JAMES SENSENBRENNER, JR.

H.R. 1551 authorizes the FAA to carry out Research and Development projects and activities for Fiscal Years 2000 and 2001. The FAA's R&D efforts assist the agency to develop and validate the technology and knowledge required to ensure the safety, efficiency, and security of our national air transportation system.

The FAA currently funds its R&D activities from two separate budget categories: the Research, Engineering and Development account; and the Engineering, Development, Test and Evaluation category of the Facilities and Equipment account. Although traditionally these accounts have been authorized separately, all of the projects and activities meet the definition of "development" as contained in Office of Management and Budget Circular A-11. Therefore, H.R. 1551 includes all FAA R&D projects and activities in a single authorization.

Overall, H.R. 1551 meets the Administration's budget request by authorizing \$648 million in FY 2000 and \$675 million in FY 2001 for the FAA to carry out research and development projects and activities.

Finally, the legislation continues the Science Committee's commitment to providing responsible oversight that protects our nation's investment in civil aviation research and development by including provisions to improve coordination of joint aviation safety research between the FAA and NASA, and that encourages the utilization of grants based on a competitive, merit-based award process.

I would like to commend the Chairwoman of the Technology Subcommittee, Mrs. Morella, and the Ranking Member of the Subcommittee, Mr. Barcia, for their efforts to craft this legislation.

Chairman SENSENBRENNER. And I recognize the gentleman from Illinois, Mr. Costello.

Mr. COSTELLO. Thank you, Mr. Chairman. Mr. Barcia is on his way over. Let me just say that we have no objection to the bill. As you know, Mr. Barcia has worked, as well as Mr. Brown, with the majority on crafting this bill.

Chairman SENSENBRENNER. I thank the gentleman from Illinois. Without objection, the bill is read a first time and, without objection, the bill will be open for amendment at any point.

[The information follows:]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the “Civil Aviation Research and Development Authorization Act of 1999”.

SEC. 2. AUTHORIZATION OF APPROPRIATIONS.

Section 48102(a) of title 49, United States Code, is amended—

(1) by striking “and” at the end of paragraph (4)(J);

(2) by striking the period at the end of paragraph (5) and inserting in lieu thereof a semicolon; and

(3) by adding at the end the following:

“(6) for fiscal year 2000, \$646,038,400 including—

“(A) \$17,269,000 for system development and infrastructure projects and activities;

“(B) \$48,021,500 for capacity and air traffic management technology projects and activities;

“(C) \$18,939,200 for communications, navigation, and surveillance projects and activities;

“(D) \$15,765,000 for weather projects and activities;

“(E) \$7,215,700 for airport technology projects and activities;

“(F) \$39,639,000 for aircraft safety technology projects and activities;

“(G) \$53,218,000 for system security technology projects and activities;

“(H) \$26,207,000 for human factors and aviation medicine projects and activities;

“(I) \$3,481,000 for environment and energy projects and activities;

“(J) \$2,171,000 for innovative/cooperative research projects and activities, of which \$750,000 shall be for carrying out subsection (h) of this section;

“(K) \$266,712,000 for En Route research and development projects and activities;

“(L) \$58,900,000 for Terminal research and development projects and activities;

“(M) \$3,000,000 for Flight Services research and development projects and activities;

“(N) \$69,200,000 for Landing and Navigation research and development projects and activities; and

“(O) \$16,300,000 for Equipment and Facilities research and development projects and activities; and

“(7) for fiscal year 2001, \$673,706,795.”.

SEC. 3. BUDGET DESIGNATION FOR RESEARCH AND DEVELOPMENT ACTIVITIES.

Section 48102 of title 49, United States Code, is amended by inserting after subsection (f) the following new subsection:

“(g) DESIGNATION OF ACTIVITIES.—(1) The amounts appropriated under subsection (a) are for the support of all research and development activities carried out by the Federal Aviation Administration that fall within the categories of basic research, applied research, and development, including the design and development of prototypes, in accordance with the classifications of the Office of Management and Budget Circular A–11 (Budget Formulation/Submission Process).

“(2) The Department of Transportation’s annual budget request for the Federal Aviation Administration shall identify all of the activities carried out by the Administration within the categories of basic research, applied research, and development, as classified by the Office of Management and Budget Circular A–11. Each activity in the categories of basic research, applied research, and development shall be identified regardless of the budget category in which it appears in the budget request.”.

SEC. 4. NATIONAL AVIATION RESEARCH PLAN.

Section 44501(c) of title 49, United States Code, is amended—

(1) in paragraph (2)(B)—

(A) by striking “and” at the end of clause (iii);

(B) by striking the period at the end of clause (iv) and inserting in lieu thereof “; and”; and

(C) by adding at the end the following new clause:

“(v) highlight the research and development technology transfer activities that promote technology sharing among government, industry, and academia through the Stevenson-Wydler Technology Innovation Act of 1980.”; and

(2) in paragraph (3), by inserting “The report shall be prepared in accordance with requirements of section 1116 of title 31, United States Code.” after “effect for the prior fiscal year.”.

SEC. 5. INTEGRATED SAFETY RESEARCH PLAN.

(a) **REQUIREMENT.**—Not later than March 1, 2000, the Administrator of the National Aeronautics and Space Administration and the Administrator of the Federal Aviation Administration shall jointly prepare and transmit to the Congress an integrated civil aviation safety research and development plan.

(b) **CONTENTS.**—The plan required by subsection (a) shall include—

(1) an identification of the respective research and development requirements, roles, and responsibilities of the National Aeronautics and Space Administration and the Federal Aviation Administration;

(2) formal mechanisms for the timely sharing of information between the National Aeronautics and Space Administration and the Federal Aviation Administration, including a requirement that the FAA–NASA Coordinating Committee established in 1980 meet at least twice a year; and

(3) procedures for increased communication and coordination between the Federal Aviation Administration research advisory committee established under section 44508 of title 49, United States Code, and the NASA Aeronautics and Space Transportation Technology Advisory Committee, including a proposal for greater cross-membership between those 2 advisory committees.

SEC. 6. ELIGIBILITY FOR AWARDS.

(a) **IN GENERAL.**—The Administrator of the Federal Aviation Administration shall exclude from consideration for grant agreements made by that Administration with funds appropriated pursuant to the amendments made by this Act any person who received funds, other than those described in subsection (b), appropriated for a fiscal year after fiscal year 1999, under a grant agreement from any Federal funding source for a project that was not subjected to a competitive, merit-based award process. Any exclusion from consideration pursuant to this subsection shall be effective for a period of 5 years after the person receives such Federal funds.

(b) **EXCEPTION.**—Subsection (a) shall not apply to the receipt of Federal funds by a person due to the membership of that person in a class specified by law for which assistance is awarded to members of the class according to a formula provided by law.

(c) **DEFINITION.**—For purposes of this section, the term “grant agreement” means a legal instrument whose principal purpose is to transfer a thing of value to the recipient to carry out a public purpose of support or stimulation authorized by a law of the United States, and does not include the acquisition (by purchase, lease, or barter) of property or services for the direct benefit or use of the United States Government. Such term does not include a cooperative agreement (as such term is used in section 6305 of title 31, United States Code) or a cooperative research and development agreement (as such term is defined in section 12(d)(1) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a(d)(1))).

SEC. 7. NOTICE.

(a) **NOTICE OF REPROGRAMMING.**—If any funds authorized by the amendments made by this Act are subject to a reprogramming action that requires notice to be provided to the Appropriations Committees of the House of Representatives and the Senate, notice of such action shall concurrently be provided to the Committees on Science and Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(b) **NOTICE OF REORGANIZATION.**—The Administrator of the Federal Aviation Administration shall provide notice to the Committees on Science, Transportation and Infrastructure, and Appropriations of the House of Representatives, and the Committees on Commerce, Science, and Transportation and Appropriations of the Senate, not later than 15 days before any major reorganization of any program, project,

or activity of the Federal Aviation Administration for which funds are authorized by the amendments made by this Act.

Chairman SENSENBRENNER. And, at this time, on behalf of Mrs. Morella and Mr. Barcia, I have an en bloc amendment at the desk. The clerk will report the amendment.

The CLERK. En bloc amendment to H.R. 1551—

Chairman SENSENBRENNER. Without objection, the amendment is considered as read and open for amendment at any point.

[The information follows:]

Page 2, line 10, strike "\$646,038,400" and insert "\$647,538,400".

Page 2, line 22, strike "\$7,215,700" and insert "\$8,715,700".

Page 3, line 23, strike "\$673,706,795" and insert "\$675,706,795".

Page 7, line 6, insert ", except as specifically authorized by this Act" after "award process".

Page 8, lines 3 through 22, strike section 7.

Chairman SENSENBRENNER. And the Chair recognizes himself for 5 minutes.

The en bloc—and, without objection the amendments will be considered en bloc—the amendment increases the authorization level by \$1.5 million in Fiscal Year 2000 and by \$2 million in Fiscal Year 2001 to make funding available for research and development grants or cooperative agreements in innovative methods of using concrete in the design construction, rehabilitation, and repair of rigid airport pavements. Considering that our nation spends \$2 billion annually to provide operationally safe and reliable airport pavements, investing in this type of research today has the potential to save millions of dollars later.

I want to thank both Mrs. Morella and Mr. Barcia for their assistance in crafting and strengthening this bipartisan legislation and I encourage all of my colleagues to join us in supporting it. The legislation as amended will continue the Science Committee's commitment to develop and maintain a civil aviation system that is universally recognized as the safest and most technologically advanced system in the world. And I yield back the balance of my time.

Does anybody seek recognition on the en bloc amendments that I have offered in behalf of the gentlewoman from Maryland and the gentleman from Michigan?

Mr. COSTELLO. Mr. Chairman, we have no objection to the en bloc amendment and ask that our colleagues support it.

Chairman SENSENBRENNER. Is there further discussion? Hearing none, the question is on the adoption of the en bloc amendment.

Those in favor will say aye.

Opposed will say no.

The ayes appear to have it. The ayes have it and the en bloc amendments are agreed to.

The next amendment on the roster is an amendment by the gentleman from California, Mr. Miller. For what purpose does he seek recognition?

Mr. MILLER. In my amendments to H.R. 1551—

Chairman SENSENBRENNER. Does the gentleman have an amendment at the desk?

Mr. MILLER. Yes, I do.

Chairman SENSENBRENNER. The clerk will report the amendment.

The CLERK. Amendment to H.R. 1551, offered by Mr. Gary Miller of California—

Chairman SENSENBRENNER. Without objection, the amendment is considered as read and the gentleman from California is recognized for 5 minutes.

[The information follows:]

Page 6, after line 21, insert the following new section:

SEC. 6. RESEARCH ON NONSTRUCTURAL AIRCRAFT SYSTEMS.

Section 4450(b)(1) of title 49, United States Code, is amended by inserting “, including nonstructural aircraft systems,” after “life of aircraft”.

Redesignate subsequent sections accordingly.

Mr. MILLER. Thank you, Mr. Chairman. The average age of commercial airline fleets is continuing to increase. For instance, 2,500 commercial aircraft in operation every day in the United States are probably at least 20 years old. From a design and engineering standpoint, the aircraft may be structurally sound, but several safety experts, including National Transportation Safety Board, have raised concerns about the performance and reliability of various non-structural components of aging aircraft. The non-structural components of aging aircraft include electrical wiring, hydraulic lines, and certain other electrical and mechanical systems.

In February of 1997, the White House Commission on Aviation and Security recommended that the FAA work with airlines and manufacturers to expand the aging aircraft program to include non-structural components. To date, little has been done to implement the recommendations. The FAA is not doing a good enough job to prevent safety-related problems caused by corrosive and deteriorating effects of non-structural components of commercial aircraft as they age.

Therefore, my amendments to H.R. 1551 simply direct the FAA to expand its current aging aircraft research and develop projects and activities to include non-structural components. It is consistent with the recommendation made by the aviation safety advocates and I urge my colleagues to accept the amendments. Thank you, Mr. Chairman.

Chairman SENSENBRENNER. Will the gentleman yield back the balance of his time?

Mr. MILLER. I yield back.

Chairman SENSENBRENNER. Is there further discussion on the amendment by the gentleman from California, Mr. Miller?

Hearing none, the question is on agreeing to the amendment. All those in favor will signify by saying aye.

Opposed, no.

The ayes appear to have it. The ayes have it and the amendment is agreed to.

The next amendment on the roster is an amendment number 3 by the gentleman from California, Mr. Kuykendall.

For what purpose does the gentleman seek recognition?

Mr. KUYKENDALL. I have an amendment at the desk.

Chairman SENSENBRENNER. The clerk will report the amendment.

The CLERK. Amendment to H.R. 1551, offered by Mr. Kuykendall—

Chairman SENSENBRENNER. Without objection, the amendment is considered as read and the gentleman from California is recognized for 5 minutes.

[The information follows:]

Page 6, after line 21, insert the following new section:

SEC. 6. INTERNET AVAILABILITY OF INFORMATION.

The Administrator of the Federal Aviation Administration shall make available through the Internet home page of the Federal Aviation Administration the abstracts relating to all research grants and awards made with funds authorized by the amendments made by this Act. Nothing in this section shall be construed to require or permit the release of any information prohibited by law or regulation from being released to the public.

Redesignate subsequent sections accordingly.

Mr. KUYKENDALL. Mr. Chairman, the Federal Aviation Administration, just like many other executive branch agencies, make grants to individuals and to different entities to do additional research and support this research. The question in this amendment is to make this information available on the Internet.

And, if you had taken a current look today at the FAA's Internet web page site, you would have noticed that there are two paragraphs mentioning their grant programs, but nothing really giving you any great detail about how many dollars, where it goes, and what type of issues they address. In fact, they even have two points on their opening statements that says they encourage and develop civil aeronautics, including new aviation technology and another one that says they research and develop with respect to a national aerospace system and civil aeronautics.

Clearly, one of their main missions is doing this and we need to make the information for these dollars available more readily and the Internet is a very appropriate place to do so. I would urge the addition of this amendment to the bill.

Chairman SENSENBRENNER. Would the gentleman yield back the balance of his time?

Mr. KUYKENDALL. I yield back, yes.

Chairman SENSENBRENNER. Any other members seek recognition on the Kuykendall amendment?

Hearing none, the question is on the adoption of the amendment. Those in favor will signify by saying aye.

Opposed, no.

The ayes appear to have it. The ayes have it and the amendment is agreed to.

Are there further amendments to the bill?

If not, report language. The gentlewoman from Maryland has proposed report language.

[The information follows:]

SUGGESTED COMMITTEE REPORT LANGUAGE TO H.R. 1551 OFFERED BY TECHNOLOGY CHAIRWOMAN MORELLA

- Of the amounts authorized to be appropriated for Airport Technology projects and activities in FY2000, the Committee intends that at least \$1,500,000 shall be for obligation for grants or cooperative agreements awarded through a competitive, merit-based process to carry out research on innovative methods of using concrete in the design, construction, rehabilitation, and repair of rigid airport pavements. To

the extent practicable, the Administrator shall consider awards that would ensure industry participation.

- Of the amounts authorized to be appropriated for Airport Technology projects and activities in FY2001, the Committee intends that at least \$2,000,000 shall be for obligation for grants or cooperative agreements awarded through a competitive, merit-based process to carry out research on innovative methods of using concrete in the design, construction, rehabilitation, and repair of rigid airport pavements. To the extent practicable, the Administrator shall consider awards that would ensure industry participation.

Mrs. MORELLA. Thank you, Mr. Chairman. Thank you, sir. In complying with the policy of this Committee, I want to offer the following suggested Committee report language to accompany specific provisions of the en bloc amendment that was accepted earlier. And I thank you for accepting it earlier. The Technology Subcommittee Ranking Member Barcia has been consulted and has agreed to incorporating the language of the Committee Report on H.R. 1551. The suggested language, which is being distributed, is necessary to allow universities and non-profit research foundations to compete for merit-based awards on concrete pavements research.

You know, taxpayers spend \$2 billion a year on runway pavements, construction, and maintenance. Investing today in the research to develop longer lasting, more reliable runways has the potential to save millions of dollars later. So I respectfully submit this as report language from the Ranking Member and from myself on behalf of the Subcommittee.

Chairman SENSENBRENNER. Is there any further discussion on the report language proposed by the gentlewoman from Maryland the gentleman from Michigan?

If not, the question is on agreeing to the proposed report language. Those in favor will say aye.

Opposed, no.

The ayes appear to have it. The ayes have it and the report language is agreed to.

Mrs. MORELLA. Thank you.

Chairman SENSENBRENNER. Further report language? If not, the time has come for a motion to report the bill favorably. And the Chair recognizes the gentleman from Tennessee.

Mr. GORDON. Mr. Chairman, I move that the Committee favorably report H.R. 1551, as amended, to the House with recommendation that the bill, as amended, do pass. Furthermore, I move that the staff be instructed to prepare the legislative report and make necessary technical and conforming amendments and that the Chairman take all the necessary steps to bring the bill before the House for consideration.

Chairman SENSENBRENNER. The question is on reporting the bill. Is there any discussion on the motion of the gentleman from Tennessee?

Hearing none, the Chair notes the presence of a reporting quorum. All those in favor of reporting the bill favorably, signify by saying aye.

Opposed, no.

The ayes appear to have it. The ayes have it and the bill is favorably reported.

Without objection, the bill will be reported in the form of a single amendment in the nature of a substitute, reflecting the amend-

ments adopted today. Without objection, the Chair is given authority to move the bill to conference pursuant to House rules and all members will have two subsequent calendar days in which to submit supplemental minority or additional views.

Any objection to any of those? And, hearing none, so ordered.

